

REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Official Action dated 13 June 2005. Responsive to the rejections made in the Official Action, Claims 1, 2, 4, 5, 6 and 7 have been amended to clarify the combination of elements which define the invention of the subject Patent Application and/or clarify the language thereof. Claims 8 and 9 were previously canceled.

In the Official Action, the Examiner objected to the Drawings because there was no description of the element 34, in Fig. 3, the element 55, in Fig. 5 and the elements 77 and 78 in Fig. 7 in the Specification.

The Specification has been amended to provide a description for the reference numerals identified by the Examiner. As the structures being identified by those reference numbers are clear from the Drawings, or equivalent to that which is shown and described in other of the Figures, no new matter has been added by these changes.

In the Official Action, the Examiner rejected Claims 1-7 under 35 U.S.C. § 102(e), as being anticipated by Wong, et al., U.S. Patent 6,562,648.

Before discussing the prior art relied upon by the Examiner, it is believed beneficial to first briefly review the method of the invention of the subject Patent Application, as now claimed. The invention of the subject Patent Application is directed to a method of separating a substrate, and a sapphire substrate in particular, from a thin film overlapping a topside of the substrate. The method

includes the step of providing a laser array, the laser array emitting a plurality of laser light beams toward a backside of the substrate for absorption by the thin film. The method includes the step of irradiating the thin film with the plurality of light beams from the laser array through the substrate. Further, the method includes the step of separating the substrate and the thin film. Further, the step of providing a laser array includes the step of providing the laser array having a predetermined dimension to illuminate an area equivalent to an area of the substrate and the thin film. Still further, the step of irradiating the thin film includes the step of providing an optical grading between the laser array and the substrate and irradiating the thin film through the grading and the substrate to provide a uniform striped pattern of irradiation.

In contradistinction, the Wong, et al. reference is directed to a structure and method for separation and transfer of semiconductor thin films onto dissimilar substrate materials. The method of the reference includes forming a thin film 1110 on a sapphire substrate 215 and subsequently removing the substrate 215 using an excimer laser having a single beam of sufficient size to illuminate the substrate 215 or the single beam is “scanned” across the backside 1115 of the substrate 215, column 4, line 55 through column 5, line 1. Whereas, in the invention of the subject Patent Application, a laser array having a plurality of laser beams is utilized to irradiate the thin film through the substrate, rather than a single laser beam that is scanned or is very high powered to supply sufficient

power to a beam of large diameter. By the method of the invention of the subject Patent Application, a more rapid and uniform heating of the interface between the substrate and the thin film is achieved, substantially reducing problems which result from thermal stress.

It is respectfully submitted that the Examiner's reference to the structure identified by reference number 1105 as a laser array is in error. The reference number 1105 is identified as a supporting substrate, column 3, lines 39-44. The supporting substrate 1105 is a temporary substrate which supports the semiconductor structure once the sapphire substrate 215 is removed. While the reference numeral 1120 identifies "ultraviolet excimer laser light", such is not a plurality of laser light beams, but strictly depicts the area irradiated by the laser beam, either as a result of the beam being the size of the area irradiated, or the area being scanned.

Nowhere does the reference disclose or suggest the step of providing a laser array, the laser array emitting a plurality of laser light beams toward a backside of the substrate for absorption by the thin film, as now claimed. Further, the reference fails to disclose or suggest the step of irradiating the thin film with the plurality of light beams from the laser array through the substrate, as claimed. Additionally, the reference fails to disclose or suggest the step of providing an optical grading between the laser array and the substrate and irradiating the thin

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film through the grading from the substrate to provide a uniform striped pattern of irradiation, as now claimed.

Therefore, as the reference fails to disclose each and every one of the method steps of the invention of the subject Patent Application, it cannot anticipate that invention. Further, as the reference fails to suggest such a combination of method steps, it cannot make obvious that invention either.

For all of the foregoing reasons, it is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
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